

CLAIMS

1. A method of viewing and controlling the balance of a vertebral column of which one spinal segment is corrected by means of conventional spinal instrumentation, characterized in that the method consists of:
  - determining and calculating the relative three-dimensional position of the upper (UEV) and lower (LEV) end instrumented vertebrae of the spinal segment corrected through anatomical points or contours identified or digitalized on the radiographs of the patient to be treated,
  - determining and calculating the position of the spinal segments which are located above and below the spinal segment corrected by the spinal instrumentation, through anatomical points or contours identified or digitalized on the radiographs of the patient to be treated, according to the relative three-dimensional position of the upper (UEV) and lower (LEV) end instrumented vertebrae,
  - and viewing the balance or imbalance of the vertebral column (1) in the vertical position and in front and side projection.
2. The method of viewing and controlling according to claim 1, characterized in that the relative three-dimensional position of the upper (UEV) and lower (LEV) end instrumented vertebrae of the corrected spinal segment is obtained from a first reconstruction in a three-dimensional visual space of the geometry of the external envelop or contour of the upper (UEV) and lower (LEV) end instrumented vertebrae and a second

reconstruction in a three-dimensional visual space of the surface of the neural arch of the upper (UEV) and lower (LEV) end instrumented vertebrae.

3. The method of viewing and controlling according to claim 2, characterized in that the first and second reconstruction steps in a three-dimensional visual space allow the relative position of the upper (UEV) and lower (LEV) end instrumented vertebrae of the corrected spinal segment to be determined in a three-dimensional visual space.
4. The method of viewing and controlling according to claim 3, characterized in that the upper (UEV) and lower (LEV) end instrumented vertebrae of the corrected spinal segment are projected on the front and side radiographs of the patient to be treated.
5. The method of viewing and controlling according to claim 3, characterized in that the front and side projection of the upper (UEV) and lower (LEV) end instrumented vertebrae of the corrected spinal segment allows the position on the front and side radiographs of the spinal segments located above and below the corrected spinal segment to be determined, and to view the appearance of the reconstructed vertebral column on the front and side radiographs.
6. The method of viewing and controlling according to claim 1, characterized in that the method consists of identifying or digitalizing at least four points delimiting a rectangle reproducing the vertebral body for each vertebra of the vertebral column.
7. The method of viewing and controlling according to claim 1, characterized in that the method consists of identifying or digitalizing the points that correspond

to the radiological indicators utilized to define the balance of the head of the patient with relation to the pelvis.

8. The method of viewing and controlling according to claim 7, characterized in that the method consists of identifying or digitalizing at least ten points for the head allowing the external contour of the head to be marked.
9. The method of viewing and controlling according to claim 1, characterized in that the method consists of identifying or digitalizing at least the anatomical points for the pelvis defining the center of each femoral head and the sacral plate.
10. The method of viewing and controlling according to claim 9, characterized in that the method consists of identifying or digitalizing at least five points for the pelvis of which one is for each femoral head and at least three are for the sacrum in order to form a triangle.
11. The method of viewing and controlling according to claim 1, characterized in that the method consists of embedding the digitalized points in the radiographs of the patient.
12. The method of viewing and controlling according to claim 1, characterized in that the method consists of reconstructing the geometric form of the upper (UEV) and lower (LEV) end instrumented vertebrae in three dimensions from the sagittal and frontal radiographs of the patient.
13. The method of viewing and controlling according to claim 1, characterized in that the method consists of

determining the linear and angular geometric position of the reconstructed lower end instrumented vertebrae (LEV) with relation to the front and side radiographs.

14. The method of viewing and controlling according to claim 1, characterized in that the method consists of projecting the upper (UEV) and lower (LEV) end instrumented vertebrae on the front and side radiographs.
15. The method of viewing and controlling according to claim 1, characterized in that the method consists of embedding the projection of the upper (UEV) and lower (LEV) end instrumented vertebrae in the radiographs, with relation to one another, by registration of the projection of the lower end instrumented vertebrae (LEV).